

PLS
DO NOT
ENTER
MNG
2/17/04

REMARKS/ARGUMENTS

The Invention centers on methods, systems, apparatus and computer programs for providing improved resolution and prediction of performance behavior and/or physical characteristic of structural features using feedback information which is provided as a function of position over respective features. The invention is especially important in the improvement and extension of resolution capability for CD-SEM measurements to dimensions below 180 nanometers. Thus, for example, the invention is useful for better determining whether a hole in a resist pattern for forming contacts is truly open thereby improving yield and process condition discrimination.

Kikuchi discloses a process for improved overlay metrology wherein the position of alignment marks are determined and weighted to account for linear and non-linear distortion between respective shots.

Kikuchi does not disclose or suggest use of feedback elements from said features which vary as a function of position over such features as required by the present claims in both the calibration database and in the data provided from the target features. The portions of Kikuchi (page 3, 30-36 and Fig. 7, 8, 10, 11, 14, 15, 18) cited in the office action refer to distortion in the wafer as reflected by the position of the target features. These portions of Kikuchi do not relate to any property of the features themselves which changes as a function of position over the features. Kikuchi is simply concerned with feature position which is then correlated to wafer distortion.

Kikuchi does not disclose the prediction of etchability as in present claims 11, 13, 20, 22, and 33-35. The portions of the specification (page 2-3 sections 0025-0030) cited in the office action are silent regarding etchability, much less